



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,535	07/25/2003	Tatsuro Uchida	03560.003334.	1160
5514	7590	11/01/2005		
			EXAMINER	
			SONG, SARAH U	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/626,535	UCHIDA, TATSURO
	Examiner Sarah Song	Art Unit 2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 June 2005 and 11 October 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4,7,9,11 and 12 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,2,4,7,9,11 and 12 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 25 July 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 27, 2005 has been entered.

Claim Objections

2. Claim 11 is objected to because of the following informalities: Claim 11 depends from canceled claim 10. For purposes of examination, the claim will be examined as depending from claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1, 2, 4, 7 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin et al. (U.S. Patent 6,621,959 newly cited).**

5. Regarding claims 1, Lin et al. disclose an optical waveguide apparatus comprising: a sheet-shaped optical waveguide 10 capable of propagating light in two-dimensional directions; a light emitting unit 50a for emitting a light beam to said waveguide, light receiving units 50b-e

for receiving light propagating in said waveguide; and a light diffusing structure 20 for diffusing the light beam from said light emitting unit; and a region having said light receiving units, wherein said light diffusing structure is located closer to the light receiving units than said emitting unit in said region, wherein the light beam emitted by said light emitting unit propagates to said light diffusing structure, the light beam is diffused in said region by said light diffusing structure, and said receiving units receive the light diffused by said light diffusing structure, and wherein said light emitting unit, at least one of said light receiving units and said light diffusing structure are not located on a straight line extending along said sheet-shaped optical waveguide.

See Figure 6 for example.

6. Regarding claim 2, the light diffusing structure is constructed such that a propagation condition of light propagating in said waveguide can be changed at a place on a light propagation path between said light emitting unit and at least one of said light receiving units in a relaying manner. See Figure 9A for example.

7. Regarding claim 4, the structure has a thickness less than a thickness (in the direction of light propagation) of a core layer of said waveguide.

8. Regarding claim 7, the light diffusing structure includes a structure capable of changing a propagation condition of light propagating in said waveguide without processing light in a regenerative manner by amplification and shaping.

9. Regarding claim 9, the waveguide has a structure in which a sheet-shaped core layer M2 is sandwiched by a first cladding layer M1 and a second cladding layer M3. See Figure 2.

10. **Claims 1 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Takushima et al. (U.S. Patent 6,810,170 newly cited).**

11. Regarding claims 1, Takushima et al. disclose an optical waveguide apparatus comprising: a sheet-shaped optical waveguide 20 capable of propagating light in two-dimensional directions; a light emitting unit 90 for emitting a light beam to said waveguide, light receiving units 91-94 for receiving light propagating in said waveguide; and a light diffusing structure 211 for diffusing the light beam from said light emitting unit; and a region having said light receiving units, wherein said light diffusing structure is located closer to the light receiving units than said emitting unit in said region, wherein the light beam emitted by said light emitting unit propagates to said light diffusing structure, the light beam is diffused in said region by said light diffusing structure, and said receiving units receive the light diffused by said light diffusing structure, and wherein said light emitting unit, at least one of said light receiving units and said light diffusing structure are not located on a straight line extending along said sheet-shaped optical waveguide. See Figure 5.

12. Regarding claim 11, the apparatus further comprises an optical-path converting structure 221 for converting at least one light beam emitted from said light emitting unit into at least one light beam propagating in at least one predetermined direction, said optical-path converting structure being arranged in a portion of said waveguide below said light emitting unit.

13. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. **Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takushima et al. as applied to claim 11 above, and further in view of Lin et al.**

16. Regarding claim 12, Takushima et al. does not expressly disclose the optical-path converting structure having a spherical, hemispherical, conical, wedge-shaped, or polygonal pyramid-shaped structure.

17. Lin et al. discloses an optical-path converting structure having a wedge-shaped structure
20.

18. Takushima et al. and Lin et al. are analogous art as pertaining to diffractive optical elements.

19. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made provide the optical-path converting structure (diffractive optical element 221) of Takushima et al. with a wedge-shaped structure.

20. One of ordinary skill in the art would have been motivated to make the modification for ease of manufacture since it was known that wedge-shaped structures are easily fabricated by molding, imprinting, etching and the like.

Response to Arguments

21. Applicant's arguments with respect to claims 1, 2, 4, 7, 9, 11 and 12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sarah Y. Song
Sarah Song
Patent Examiner
Group Art Unit 2874